

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2009  
 DateRun: 01/31/2009  
 Experimenters: Johanna Oviedo  
 ClientType: Lab  
 ProjectNumber: Project #1  
 Substrates: Stainless Steel  
 PartType: Coupon  
 Contaminants: Resins/Rosins  
 Cleaning Methods: Immersion/Soak  
 Analytical Methods: Gravimetric  
 Purpose: To remove resing from stainless steel using immersion cleaning

Experimental Procedure: Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning. Products were selected based on the compatibility of substrate and for removal of the contaminant. Ten percent concentrations were used and heated the samples at 130F. The coupons were immersed in a product for 5 minutes, rinsed in tap water at 120 F and dried using compressed air at room temperature. Coupons were coated with the resin contaminant using a handheld swab and allowed to dry for 120 minutes at room temperature. The contaminated coupons were weighed again to determine the amount of soil added. After cleaning process, the final weights were recorded, efficiencies were calculated and recorded.

| Cleaner                 | Initial wt | Final wt | % Removed |
|-------------------------|------------|----------|-----------|
| Sky Cleaner             |            |          |           |
|                         | 0.6177     | 0.4749   | 23.12     |
|                         | 0.4480     | 0.4382   | 2.19      |
|                         | 0.5442     | 0.4549   | 16.41     |
| Green Works All Purpose |            |          |           |
|                         | 0.2768     | 0.1345   | 51.41     |
|                         | 0.2151     | 0.2328   | -8.23     |
|                         | 0.3010     | 0.1964   | 34.75     |
| Heavy Duty Cleaner      |            |          |           |
|                         | 0.1875     | 0.1840   | 1.87      |
|                         | 0.3481     | 0.3399   | 2.36      |
|                         | 0.2186     | 0.2030   | 7.14      |
| Clorox Kitchen Cleaner  |            |          |           |
|                         | 0.1919     | 0.2003   | -4.38     |
|                         | 0.2589     | 0.2810   | -8.54     |
|                         | 1.1522     | 1.0397   | 9.76      |

|          |                                    |                                   |               |                    |                          |                      |
|----------|------------------------------------|-----------------------------------|---------------|--------------------|--------------------------|----------------------|
| Summary: | <b>Substrates:</b> Stainless Steel |                                   |               |                    |                          |                      |
|          | <b>Contaminants:</b> Resins/Rosins |                                   |               |                    |                          |                      |
|          | <b>Company Name:</b>               | <b>Product Name:</b>              | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>        | <b>Observations:</b> |
|          | Sky Products Company Inc           | Cleaner #10                       | 10            | -1.05              | <input type="checkbox"/> |                      |
|          | Clorox Company                     | Green Works Multi-Surface Cleaner | 10            | 13.96              | <input type="checkbox"/> |                      |
|          | Scout Systems                      | Scout Heavy Duty                  | 10            | 25.98              | <input type="checkbox"/> |                      |
|          | Clorox Company                     | Clorox Kitchen Cleaner            | 10            | 3.79               | <input type="checkbox"/> |                      |

Conclusion: No product was effective at removing the resin using immersion cleaning.